

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 116515

April-17-14 7:45:42 AM

116515

Page 3

Item ID: D4807-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Support Assembly
Start Date: 4/16/14 Start Qty: 2.00 ***2*** Cust Item ID:
Required Date: 5/01/14 Req'd Qty: 2.00 ***2*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
126		0.00							
126						2		FF	14-06-18
Small Fab	Memo	0.00							
Small Fab	INSERT BUSHINGS AS PER NOTE 8 & 9								
127		0.00							
127	QC5- Inspect part completeness to step on W/O	0.00				2			
QC	Memo	0.00							
Quality Control									
130		0.00							
130	Identify as per dwg & Stock Location: <u>ST/22</u>	0.00				2 x			14-6-19.
Packaging	Memo	0.00							
Packaging									

DAS
27
9-89

4/6/19

DAS
26
9-89

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FAULT CATEGORY

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Work Order ID 116515

April-17-14 7:45:42 AM

116515

Page 4

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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140

QC21- Final Inspection - Work Order Release

0.00

140

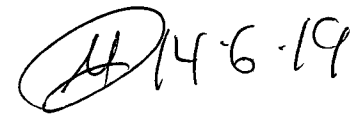
QC

Memo

0.00

Quality Control

ML5 14-06-19



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Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
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Offset/Setup									
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Transport									
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FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Picklist Print

April-17-14 7:45:46 AM

Page 1

Work Order ID: 116515

116515

Parent Item: D4807-041

D4807-041

Parent Item Name: Support Assembly

Start Date: 4/16/14

Required Date: 5/01/14

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A NEW ISSUE 14-01-16 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4807-1P		Purchased	No				Each	0.0000		2			
----------	--	-----------	----	--	--	--	------	--------	--	---	--	--	--

D4807-1P

Support

NAS75C6-009

Purchased No

Each 6.0000

NAS75C6-009

Bushing

**

2x SP 14-6-5

**

FF 14-06-10

Location

Loc Qty

Loc Code

ST277

6

M128245

6

2

NAS77C6-017

Purchased

No

Each 6.0000

NAS77C6-017

Bushing

**

FF 14-06-10

Location

Loc Qty

Loc Code

ST277

6

M128110

6

2

DQA: _____ Date: _____



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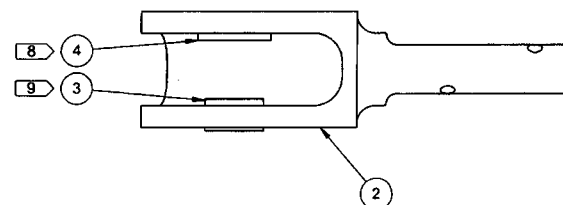
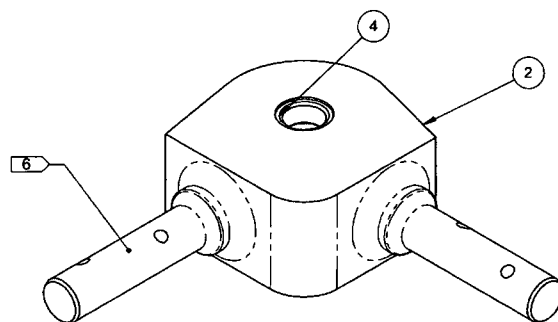
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ITEM NO.	QTY. -041	PART NUMBER	DESCRIPTION
1	X	D4807-041	SUPPORT ASSEMBLY
2	1	D4807-1	SUPPORT
3	1	NAS75C6-009	BUSHING
4	1	NAS77C6-017	BUSHING



116515 ML5
14-04-17

D4807-041 SUPPORT ASSEMBLY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.59 lbs
- 8) NAS77C6 BUSHING IS PRESS FIT
- 9) NAS75C6 BUSHING IS SLIDE FIT

A		NEW ISSUE		RF	13.09.16
REV.	DESCRIPTION			BY	DATE
DESIGN	RF	DART AEROSPACE LTD			
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA			
CHECKED	HS	DRAWING NO.	REV. A		
MFG. APPR.	JLM	D4807	SHEET 1 OF 2		
APPROVED	HS	TITLE	SCALE		
DE APPR.	DS	SUPPORT ASSEMBLY	NTS		
DATE	13.12.30		<small>COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMPILED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>		

APPROVED

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

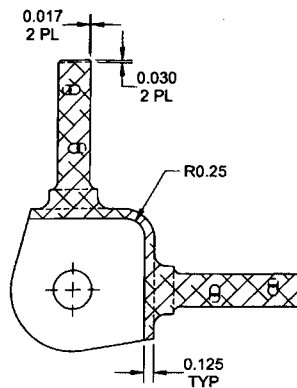
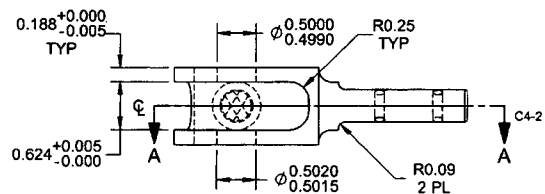
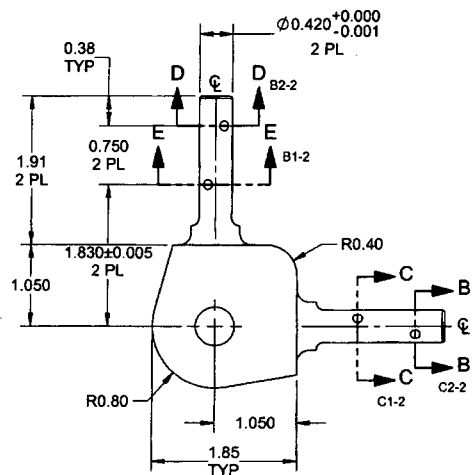
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube <input type="checkbox"/></td> <td style="width:15%;">Crosstube <input type="checkbox"/></td> <td style="width:15%;">Water Jet <input type="checkbox"/></td> <td style="width:15%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

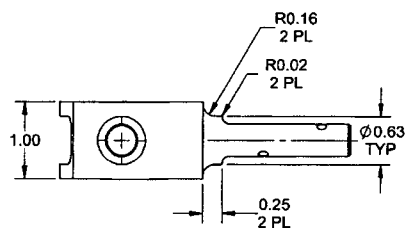
Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

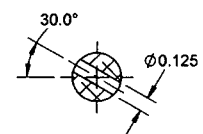
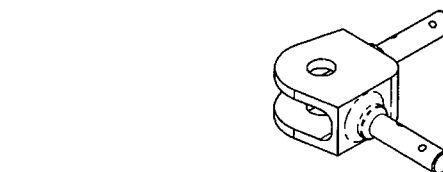
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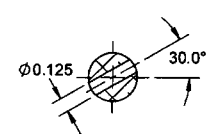
SECTION A-A B6-2



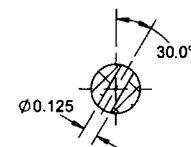
D4807-1 SUPPORT



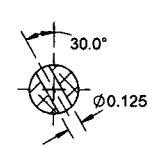
SECTION B-B C6-2



SECTION C-C C6-2



SECTION D-D D7-2



SECTION E-E D7-2

NOTES:

- 1) MATERIAL: 17-4 PH STAINLESS STEEL BAR, H900 CONDITION
PER AMS 5804/5643
DART SPEC M17-4-B
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.57 lbs
- 8) LIQUID PENETRANT INSPECT PER QSI 038 6.1.1 (ASTM E1417 LEVEL 2)

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	HS	DRAWING NO.	REV. A
MFG. APPR.	JLM	D4807	SHEET 2 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	SUPPORT ASSEMBLY	NTS
DATE	13.12.30	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
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Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO23859**

Purchase Order Date 4/17/2014

PO Print Date 4/17/2014

Page Number 1 of 2

Order From :

ARCHER PRECISION INC.
2228 GLADWIN CRESENT
OTTAWA, ON K1B 4S6
CA

VC-GLO001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAKED
4/16/14

Contact Name

Vendor Phone 613 899 2405

Ship To Contact

Ship To Phone

Ship Via: FedEx PI collect

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
		Line Comments	Promise Date				
		Delivery Comments					
1	D4807-1P	Support	5/8/2014 Yes 5/9/2014 19	FN	2.00 Each	\$990.46	\$1,980.9
		MACHINE AS PER DWG D4807 REV. A B116515 PLEASE PROVIDE MATERIAL AS PER THE LAST ORDER PO22666					

Line Total:

\$1,980.9

2 71401-45

PROCUREMENT
QUALITY CLAUSES

19
5/8/2014

1.00

\$0.00

\$0.0

Procurement Quality Clauses
A004 faa-pma/tso
A005 right of entry
A007 first article inspection
A016 personnel qualification
A040 notification of escape clauses
A041 quality management system
A042 dart notification by supplier
A043 retention of quality document

No
5/8/2014
19.

SP/4-6-5.

Note:

4/17/2014



2228 Gladwin Crescent
Ottawa, Ontario
K1B 4S6

Phone # 613-899-2405

Packing Slip

Date	Invoice #
6/4/2014	1037

Ship To

Main Finished Goods Location
Dart Aerospace
1270 Aberdeen Street
Hawksbury, Ontario
K6A 1K7

P.O. No.	Ship	Via	FOB	Project
23859	6/4/2014	delivered	Archer	

Qty	Item Code	Description
2	Sales	D4807-1P HST (ON) on sales SP/4-6-5.



2228 Gladwin Cres.
Ottawa, Ont.
K1B 4S6

Telephone (613) 899-2405
Fax (613) 226-1719


Certificate of Compliance

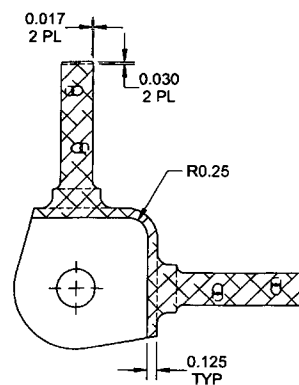
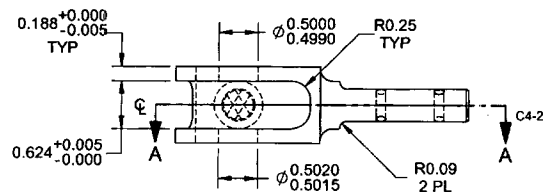
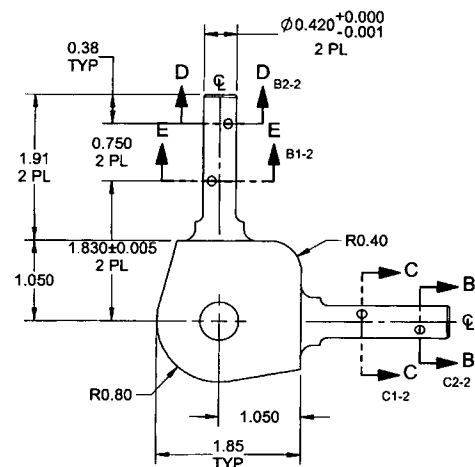
To:
Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury Ont.
K6A 1K7

4 June 2014

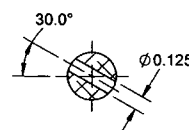
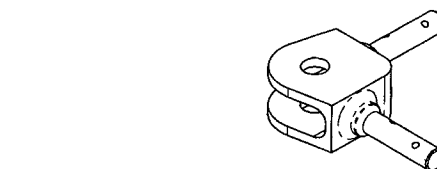
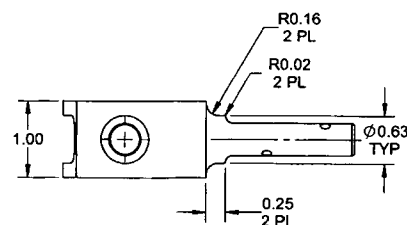
Po Number	Part Number	Quantities
23859	D4807-1P	2

It is hereby certified that all articles mentioned above are in conformance with the requirements, specification and drawings as listed on customer purchase order number, 23859 issued by Dart Aerospace Inc.

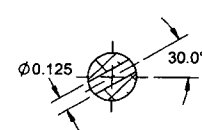

Greg Kumpula
Quality Inspector
Archer Precision Inc.
2228 Gladwin Cress.
Ottawa, Ontario
K1B 4S6



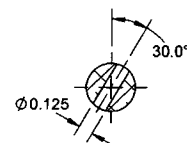
SECTION A-A B6-2



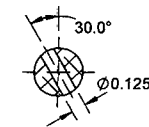
SECTION B-B C6-2



SECTION C-C C6-2



SECTION D-D D7-2



SECTION E-E D7-2

D4807-1 SUPPORT

NOTES:

- 1) MATERIAL: 17-4 PH STAINLESS STEEL BAR, H900 CONDITION
PER AMS 5604/5643
DART SPEC M17-4-B
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.57 lbs
- 8) LIQUID PENETRANT INSPECT PER QSI 038 6.1.1 (ASTM E1417 LEVEL 2)

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	HS	DRAWING NO.	REV. A
MFG. APPR.	JLM	D4807	SHEET 2 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.	D6	SUPPORT ASSEMBLY	NTS
DATE	13.12.30	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



Archer Precision

Short date 6/4/14



Plan Name D4807-1

Part No.: * u_prtnu *

Customer: * u_cus *

Rev.:

u_jobnum * u_jobnum *

u_qtynu * u_qtynu *

Customer PO.: * u_Cuspo *

BSN: D4807-1P

u_mtl * u_mtl *

Incr. Smpl No.: 1

Name	ID	Actual	Nominal	pos Tol	neg Tol	Diff	<-- -->
■ 1 - Dia_Cylinder1	D	0.50201	0.50175	0.50200	0.50150	0.00026	0.00001
■ 2 - Dia_Cylinder2	D	0.49941	0.49950	0.50000	0.49900	-0.00009	-
■ 3 - Slot Top	Z	-0.18617	-0.18800	0.00500	0.00000	0.00183	--
■ 4 - Slot Width	CartDist	0.62572	0.62400	0.00500	0.00000	0.00172	--
■ 5 - Dia_Post 1	D	0.41991	0.42000	0.00000	-0.00100	-0.00009	---
■ 6 - Dia_Post2	D	0.41979	0.42000	0.00000	-0.00100	-0.00021	---
■ 7 - Post 1 End to Hole	CartDist	0.38276	0.38000	0.01000	-0.01000	0.00276	--
■ 7 - Post 2 End to Hole	CartDist	0.38233	0.38000	0.01000	-0.01000	0.00233	-
■ 8 - Cross Hole Distance	CartDist	0.75020	0.75000	0.00500	-0.00500	0.00020	-
■ 8 - Cross Hole Distance 2	CartDist	0.75014	0.75000	0.00500	-0.00500	0.00014	-
■ 9 - Post 1 Length	CartDist	1.91012	1.91000	0.01000	-0.01000	0.00012	-
■ 9 - Post 2 Length	CartDist	1.91002	1.91000	0.01000	-0.01000	0.00002	-
■ 10 - Side 1	Y	1.05231	1.05000	0.00500	-0.00500	0.00231	--
■ 11 - Hole Distance 1	Y	1.82903	1.83000	0.00500	-0.00500	-0.00097	-
■ 11 - Hole Distance 2	X	1.82927	1.83000	0.00500	-0.00500	-0.00073	-
■ 12 - Base Width 1	ResEle	1.85247	1.85000	0.01000	-0.01000	0.00247	-
■ 12 - Base Width 2	ResEle	1.85191	1.85000	0.01000	-0.01000	0.00191	-
■ 13 - Side 2	X	1.05175	1.05000	0.00500	-0.00500	0.00175	--
■ 14 - Dia	D	1.60032	1.60000	0.01000	-0.01000	0.00032	-
■ 15 - Dia_Circle1	D	0.12509	0.12500	0.00400	-0.00100	0.00009	---
■ 15 - Dia_Circle2	D	0.12558	0.12500	0.00400	-0.00100	0.00058	--
■ 15 - Dia_Circle3	D	0.12647	0.12500	0.00400	-0.00100	0.00147	-
■ 15 - Dia_Circle4	D	0.12707	0.12500	0.00400	-0.00100	0.00207	-
■ 17 - Wall Thickness	CartDist	0.12705	0.12500	0.00500	-0.00500	0.00205	--

THYSSENKRUPP MATERIALS NA

ARCHER PRECISION INC.

STAINLESS STEEL PLATE 17-4 STAINLESS
1.50" THICK X 4.2500" X 4.2500"
PART NO.

PO/Rel 503

Nous certifions que le document reproduit ici est
une copie conforme du rapport fourni par le
producteur du materiel ou les donnees resultant de


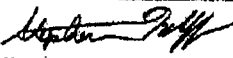
Certificate of Mill Test Results

BL VIM-426274-001

14May14

l'analyse faite par un laboratoire qualifie.
SIGNE PAR:

Pg 1/3

	Certificate of Test		 <small>Stephen Wolff - Director, Corporate Quality Assurance</small>															
	<table border="1"> <tr> <th colspan="2">Mill Information</th> <th colspan="2">Customer Information</th> </tr> <tr> <td>Cert Number</td> <td>0122229-00</td> <td>Name</td> <td>COPPER & BRASS SALES</td> </tr> <tr> <td>Sales Order</td> <td>50-093-229</td> <td>PO</td> <td>5400197284-R04</td> </tr> <tr> <td>Cert Date</td> <td>Oct-28-2013</td> <td>PO Date</td> <td>Sep-20-2013</td> </tr> </table>			Mill Information		Customer Information		Cert Number	0122229-00	Name	COPPER & BRASS SALES	Sales Order	50-093-229	PO	5400197284-R04	Cert Date	Oct-28-2013	PO Date
Mill Information		Customer Information																
Cert Number	0122229-00	Name	COPPER & BRASS SALES															
Sales Order	50-093-229	PO	5400197284-R04															
Cert Date	Oct-28-2013	PO Date	Sep-20-2013															
500 Green Street Washington, PA 15301																		

Sold COPPER & BRASS SALES to: DIV THYSSENKRUPP MTRLS NA INC PO BOX 5116 SOUTHFIELD, MI 48086	Ship COPPER & BRASS ELKHART to: 1015 SAINT JEROME ST MISHAWAKA, IN 46544
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Material Information

"ATI 17-4" PRECIPITATION HARDENABLE STAINLESS STEEL PMP HOT ROLLED PLATE ANNEALED PICKLED COMMERCIAL CUT EDGE	
ASTM-A-693-13 CND A/H900	ASME-SA-693-13 CND A/H900
AMS 5604G CND A/H900	UNS S17400

Piece Information

	Gauge	Width	Length					Total Wt
Pcs	(In)	(In)	(In)	Heat #	Piece ID	Section Id	Lot #	(lbs)
Item: 001	Cust-Id: SSFLR00085			Govt-Contract-#:		Govt-DO-Rating:		
	Cust-Job:			ScheduleB:				
1	1.5000	48.0000	144.0000	840870	AB23975	---	428223	3040

Chemistry Testing

Element	Requirements		Final Heat Analysis	
	Min	Max	840870	Loc
C	---	.07	.04	BN
MN	---	1.00	.67	BN
P	---	.040	.027	BN
S	---	.030	< .001	BN
SI	---	1.00	.20	BN
CR	15.00	17.50	15.38	BN
NI	3.00	5.00	4.73	BN
MO	---	.50	.24	BN
CU	3.00	5.00	3.25	BN
CB	.15	.45	.25	BN
TA	---	---	.010	TC
CBT	.15	.45	.26	BN
CBC	5.00	---	5.81	BN



Page 1 of 3

ALC720 10/31/2013 09:24:40

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER


Del.: 2403133210

CstAr

CstOr VIM-625884

Wgt.: 33 LB

Date 05/07/2014



**skyservice****Work Order Traveler**
Sky Service F.B.O. Inc.

Page: 1 of 1











DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO20441	Customer: Cash Sale	Dept: NDT YUL	Reference: 24607
Descr:	PN: DART AEROSPACE	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN: 0	CSN: 0	TSO: 0	

Task:	Sequence: 0
-------	-------------

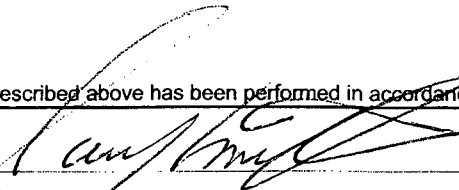

Work Required:

- ① W.O. ID # 120840 ITEM: ~~D212~~ D212-664-107 FWD CROSS TUBE LOW
- ② W.O. ID # 120841 ITEM: D212-664-107 FWD CROSS TUBE LOW
- ③ W.O. ID # 117201 ITEM: D212-664-207 AFT CROSS TUBE LOW
- ④ W.O. ID # 119987 ITEM: D212-664-207 AFT CROSS TUBE LOW
- ⑤ W.O. ID # 116515 ITEM: D4807-041 SUPPORT ASSY QTY 2
- CARRY OUT NDT ON ITEMS LISTED ABOVE

Action Taken:	Date:	Initial/Stamp:
① W.O. ID # 120840 NO CRACKS FOUND	16 JUN 14	 
② W.O. ID # 120841 NO CRACKS FOUND	16 JUN 14	 
③ W.O. ID # 117201 NO CRACKS FOUND	16 JUN 14	 
④ W.O. ID # 119987 NO CRACKS FOUND	16 JUN 14	 
⑤ W.O. ID # 116515 NO CRACKS FOUND	16 JUN 14	 
LIQUID PENETRANT INSPECTION IAW ASTM E1417-M13 AND HIGH FREQUENCY EDDY CURRENT CARRIED OUT ON ALL ITEM LISTED ABOVE		

Description	Location	P/N	Qty	Batch	S/N Off	S/N On
LPI	ARDROX	970 P25E		02312131		
BLACK LIGHT		T-20990N				
EDDY CURRENT	NORTEC	500S		S/N T20656	CAL DAE	30 JAN 2015

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 	ACA/SCA Stamp: 	Date: 16 JUN 2014
Name: GARY SMITH		

THYSSENKRUPP MATERIALS NA

ARCHER PRECISION INC.

STAINLESS STEEL PLATE 17-4 STAINLESS
1.50" THICK X 4.2500" X 4.2500"
PART NO.

PO/Rel 503

Nous certifions que le document reproduit ici est
une copie conforme du rapport fourni par le
producteur du matériel ou les données résultant de


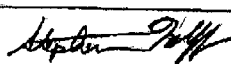
Certificate of Mill Test Results

BL VIM-426274-001

14May14

Pg 2/3

L'analyse faite par un laboratoire qualifié.
SIGNÉ PAR:

 ATI Allegheny Ludlum 500 Green Street Washington, PA 15301	Certificate of Test		 Stephen Wolff - Director, Corporate Quality Assurance
	Mill Information Cert Number 0122229-00 Sales Order 50-093-229 Cert Date Oct-28-2013		Customer Information Name COPPER & BRASS SALES PO 5400197284-R04 PO Date Sep-20-2013

Chemistry Testing

Allegheny Ludlum performs chemical analysis by the following techniques:
C, S by combustion/infrared; N, O, H by inert fusion/thermal conductivity;
Mn, P, Si, Cr, Ni, Mo, Cu, Pb, Co, V, by WDXRF; Pb, Bi, Ag by GFAA;
S by OES; Al and Ti (>0.10%) by WDXRF, otherwise by OES.

CBC = Cb / C

CBT = Cb + Ta

Mechanical Testing

		LOT 428223		LOT 428223	
Condition:		ANNEALED		H900	
Direction:		TRANSVERSE		TRANSVERSE	
Temperature:		ROOM TEMP		ROOM TEMP	
Spec:					
Test Limit	Units	Result	Loc	Result	Loc
HARDNESS	---	335. HBW	TC	42.0 HRC	TC
YIELD 0.2%	psi	---	--	176000.	TC
TENSILE	psi	---	--	200000.	TC
ELONGATION	%	---	--	15.	TC
RED OF AREA	%	---	--	58.	TC

When hardness is measured using the Brinell scale, the indentation measuring device is Type A.

"H", "TH", "RH", and other heat treated values are capability test results.

Mechanical Property Requirements

Condition:		ANNEALED		H900	
Direction:		TRANSVERSE		TRANSVERSE	
Temperature:		ROOM TEMP		ROOM TEMP	
Spec:					
Test Limit	Units	Min	Max	Min	Max
YIELD 0.2%	psi	---	---	170000.	---
TENSILE	psi	---	---	190000.	---
ELONGATION	%	---	---	10.	---

Page 2 of 3

ALC720 10/02/2013 09:26:40

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER

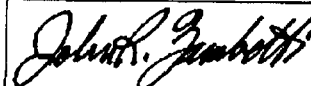
Del.: 2403133210

CstAr

CstOr VIM-625884

Wgt.: 33 LB

Date 05/07/2014



THYSSENKRUPP MATERIALS-NA

ARCHER PRECISION INC.

STAINLESS STEEL PLATE 17-4 STAINLESS
1.50" THICK X 4.2500" X 4.2500"
PART NO.

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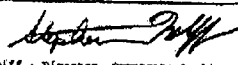
Certificate of Mill Test Results

BL VIM-426274-001

14May14

l'analyse faite par un laboratoire qualifié.
SIGNÉ PAR:

Pg 3/3

 ATI Allegheny Ludlum	Certificate of Test		 <small>Stephen Wolfe - Director, Corporate Quality Assurance</small>
	Mill Information	Customer Information	
500 Green Street Washington, PA 15301	Part Number 0122229-00	Name COPPER & BRASS SALES	
	Sales Order 50-093-229	PO 5400197284-R04	
	Part Date Oct-28-2013	PO Date Sep-20-2013	

Mechanical Property Requirements

Condition:		ANNEALED		H900	
Direction:		TRANSVERSE		TRANSVERSE	
Temperature:		ROOM TEMP		ROOM TEMP	
Spec:					
Test Limit	Units	Min	Max	Min	Max
RED OF AREA	%	---	---	35.	---
HARDNESS	---	---	352. HBW	40. HRC	47. HRC

Metallography - General

Ferrite <= 5% per periodic test requirement.

Certification Statements

Allegheny Ludlum does not use mercury in the testing or production of its products.

Material is of USA melt and manufacture.

No welds/weld repairs performed.

Knowingly and willfully recording any false, fictitious or fraudulent statement or entry on this document may be punished as a felony under Federal Statutes, including Federal Law, Title 18, Chapter 47.

Material is compliant with the European Union Directive 2011/65/EU - Restriction of Hazardous Substances (RoHS2).

DIN EN 10204:2005 3.1 Certificate

General Statements

TESTING WAS PERFORMED AT THE FOLLOWING LOCATIONS

BN = ATI-ALLEGHENY LUDLUM; 100 River Road; Brackenridge, PA 15014

TC = ATI-ALLEGHENY LUDLUM; 1300 Pacific Avenue; Natrona Heights, PA 15065

WARNING: Processing that makes fumes, dust, or solutions may cause lung disease. Please see MSDS for further information which has been supplied to your Purchasing Department. For an additional copy, please refer to our web site at www.atimetals.com/businesses/business-units/ludlum/Pages/msds.aspx.

For access to online certifications of Test, please register at www.alcextra.com.

The above is a true copy of the data on file. The material and test results conform to the sales contract and specification(s) as set forth in ATI Allegheny Ludlum's order acknowledgement. This certificate of Test may not be reproduced except in full without the written authorization of the company.

ATI Allegheny Ludlum's website contains a listing of material produced, general technical and contact information, and current quality and company accreditations including but not limited to ISO-9001, AS-9100, Nadcap, and ISO/IEC 17025. Please visit us at www.alleghenyludlum.com.

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ALC720 12/31/2013 09:24:40

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER

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Wgt.: 33 LB

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